

order 11079

4328



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

RBT18511
Job Sheet 187451



Part No: RBT18511

Job Qty: 4 pcs

Part Name: Main Rotor Stationary Swashplate Bearing Removal



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 12/4/18

Job Tracking No:

Due Date: 2/4/19

Created By: Marie Lajeunesse

Type: SOLD

Description:

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Conventional Lathe - 1	4 pcs	2/4/19	2/4/19	0.00	2.00	Conventional Lathe - 1		
							Conventional Lathe - 2		
110	QC 2	4 pcs	2/4/19	2/4/19	0.00	0.00	QC 2 - 1		
							QC 2 - 12		
							QC 2 - 14		
							QC 2 - 16		
							QC 2 - 17		
							QC 2 - 19		
							QC 2 - 2		
							QC 2 - 20		
							QC 2 - 22		
							QC 2 - 23		
							QC 2 - 25		
							QC 2 - 32		
							QC 2 - 33		
							QC 2 - 35		
							QC 2 - 38		
							QC 2 - 39		
							QC 2 - 4		
							QC 2 - 40		
							QC 2 - 44		
							QC 2 - 45		
							QC 2 - 48		
							QC 2 - 49		
							QC 2 - 50		
							QC 2 - 51		
							QC 2 - 52		
							QC 2 - 54		
							QC 2 - 56		
							QC 2 - 57		
							QC 2 - 62		
							QC 2 - 63		
							QC 2 - 8		



Container No: S147567



Part: RBT18511

Job No: 187451

Serial No/Batch: S147567

Revision:

Inspector:

Exp Date:

Instructions:

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Date: 01/24/19

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

120 QC 8

4 pcs

2/4/19

0.00 0.00

QC 8 - 12

QC 8 - 14

QC 8 - 16

QC 8 - 17

QC 8 - 20

QC 8 - 25

QC 8 - 3

QC 8 - 32

QC 8 - 33

QC 8 - 35

QC 8 - 38

QC 8 - 39

QC 8 - 4

QC 8 - 44

QC 8 - 45

QC 8 - 49

QC 8 - 58

QC 8 - 8

QC 8 - 9

QC 8 - 68

130 Outsource - 12 - Black Oxide 4 pcs

2/4/19

GRO002-VC

140 Packaging 2 - Receive 4 pcs

2/4/19

0.00 0.00

Packaging 1 - 1 - B4B

Packaging 1 - 2 - B4B

Packaging 1 - 3 - B4B

Packaging 1 - 4 - B4B

Packaging 1 - 5 - B4B

150 QC 6

4 pcs

2/4/19

0.00 0.00

QC 6 - 16

QC 6 - 38

QC 6 - 42

QC 6 - 9

QC 6 - 68

160 Packaging 3 - Stock

4 pcs

2/4/19

0.00 0.00

Packaging 3 - 1 - B4B

Packaging 3 - 2 - B4B

Packaging 3 - 3 - B4B

Packaging 3 - 4 - B4B

Packaging 3 - 5 - B4B

170 QC 21 - FG

4 pcs

2/4/19

0.00 0.00

QC 21 - FG - 16

QC 21 - FG - 21

Part Op 100 - 1-Machine as per DWG. 2-Deburr

Descriptions: 120 - Engrave T/N and/or P/N number using MARKTRONIC engraver as per DWG.

130 - Issue P/O: 042398 -Black oxide finish, MIL-C-13924C Class 1 -Apply thin layer of oil/CPC per MIL-PRF-16173 Grade 3 Class 1 or MIL-c-81309 Type III Or MILL-C23411A or MIL-PRF-81309 and wipe off excess. -Material type; DOM -Certificate of Conformity is required

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MT-A513-T-4.500W0.250	ASTM A513 TYPE 5 (1020/1026) SEAMLESS ALLOY STEEL ROUND TUBING (DOM), 4.500 Dia. and 0.250 Wall	2.0800 (.52 ea)	100-Conventional Lathe - 1	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Conventional Lathe - 1	MT-A513-T-4.500W0.250	2	0	0

Part Specifications

Specifications could not be found.

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor	
				QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐ ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled		FAULT CATEGORY ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
Other/Details:					

◀ Key to figure 2-1

- | | | |
|---------------------------|---------------------------------|---------------------------|
| 1. Nut (bearing flange) | 8. Retainer | 15. Counterweights |
| 2. Washer | 9. Bearing | 16. Bolt |
| 3. Bolt | 10. Nut (interrupter) | 17. Washer |
| 4. Bolt | 11. Washer | 18. Nut |
| 5. Nut (bearing retainer) | 12. Bolt | 19. Cotter pin |
| 6. Washer | 13. Interrupter | 20. Rotating swashplate |
| 7. Bolt | 14. Interrupter (counterweight) | 21. Stationary swashplate |
| | | 22. Identification plate |

SHOP COPY

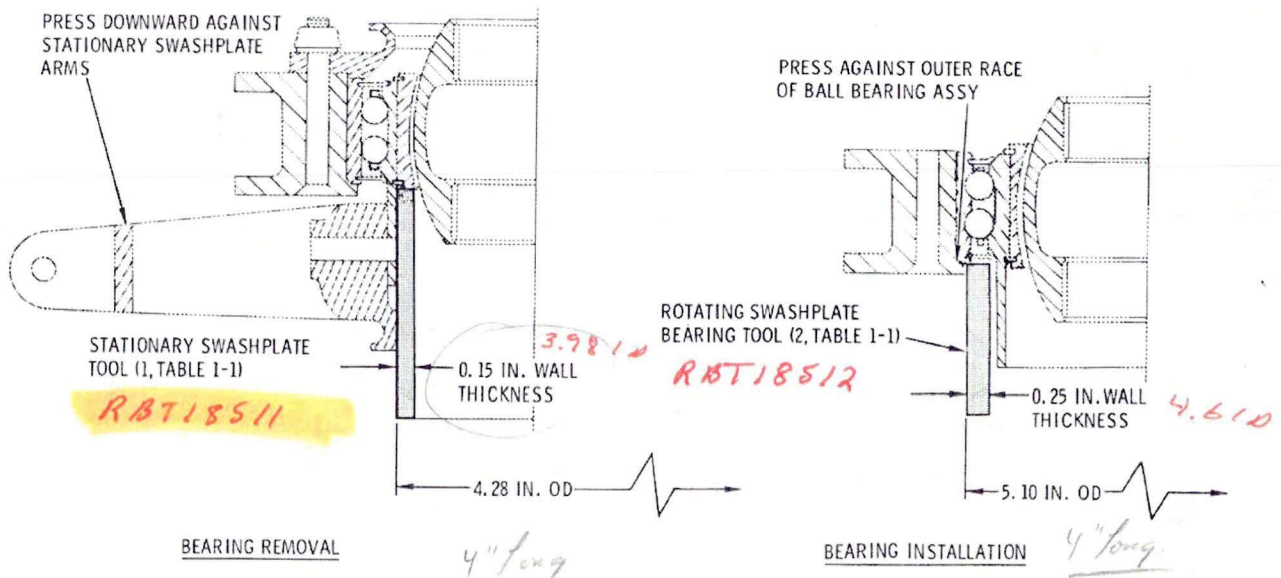
Rel 01/03/06

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 187457 M15
18-12-04

NOTES:

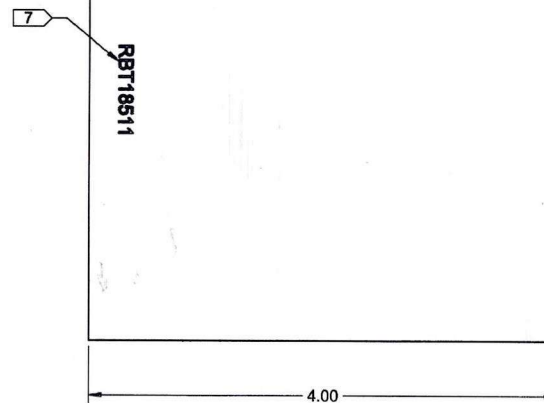
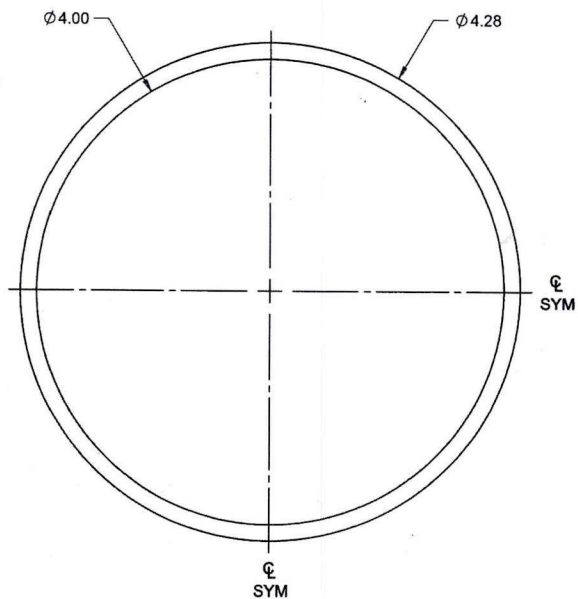
ALL DIMENSIONS IN INCHES.

CAUTION: USE TO AVOID NICKING
OR DENTING SPHERICAL BALL.



49-094

Figure 2-2. Main Rotor Swashplate - Replacement



RBT18511 MAIN ROTOR STATIONARY SWASHPLATE BEARING REMOVAL

NOTES:

- 1) MATERIAL: A513 TYPE 5 DOM TUBING
- 2) HEAT TREAT: N/A
- 3) FINISH: BLACK OXIDE PER MIL-C-13924 CLASS 1 THEN APPLY A THIN LAYER OF OIL / CPC PER MIL-PRF-16173 GRADE 3 CLASS 1 OR MIL-C-81309 TYPE III OR MIL-C-23411A OR MIL-PRF-81309 AND WIPE OFF EXCESS
- 4) TOLERANCES: X.X = +/- 0.1" / +/- 1"
 X.XX = +/- 0.01" / +/- 0.5"
 X.XXX = +/- 0.005" / +/- 0.1"
 X.XXXX = +/- 0.0005" / +/- 0.05"
 PARALLELISM, ECCENTRICITY AND SYMMETRY ABOUT ALL CENTER LINES = +/- 0.005"
- 5) UNITS: INCHES UNLESS OTHERWISE NOTED
- 6) REMOVE ALL SHARP EDGES, BURRS, AND WELD SPATTERS IF APPLICABLE
- 7) IDENTIFICATION: MACHINE ENGRAVE OR DOT MARK T/N AS SHOWN

A	NEW ISSUE	19-529	MBB
REV.	DESCRIPTION	ECN #	BY
DESIGN	MBB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	MBB		
CHECKED	MBB	TOOL PART #	REV. A
MFG. APPR.	DP	RBT18511	SHEET 1 OF 1
APPROVED	W.P.	TITLE	SCALE
		MAIN ROTOR STATIONARY SWASHPLATE BEARING REMOVAL	NTS
DATE	1/22/2019	COPYRIGHT © 2019 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

2/4 1/4
 200-415/715.800



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO042398



Supplier: GRO002-VC
Group Altech
2455 Halpern
St Laurent
QC
H4S 1N9 Canada
Phone: 514-335-3666
Fax: 514-335-3868

PO No: PO042398
PO Date: 1/25/19
Due Date: 2/1/19
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Tsimiklis, ChrisoulaPhone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 60
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	188959	RBE350A94- 3700-A-05	Foot -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C- 13924C Class 1 -Certificate of Conformity is required	Firmed	-	2/1/19	40 pcs	0 pcs	40 pcs	\$2.80/pcs	\$112.00
2	188717	RBT18560-3	Ring -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C- 13924C Class 1 -Certificate of Conformity is required	Firmed	-	2/1/19	8 pcs	0 pcs	8 pcs	\$1.35/pcs	\$10.80



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PURCHASE ORDER

PO042398



Items											
Line Item	Job	Part	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
3	187451	RBT18511	Main Rotor Stationary Swashplate Bearing Removal -Issue P/O; -Black oxide finish, MIL-C-13924C Class 1 -Apply thin layer of oil/CPC per MIL-PRF-16173 Grade 3 Class 1 or MIL-c-81309 Type III Or MILL-C23411A or MIL-PRF-81309 and wipe off excess. -Material type; DOM -Certificate of Conformity is required	Firmed	-	2/1/19	4 pcs	0 pcs	4 pcs	\$8.25/pcs	\$33.00
4	185000	RBE105-31702W23-9	Measuring Flange LH Assembly -Issue P/O to GROUPE ALTECH: P/O Black Oxide -Material type; 4140 -Certificate of Conformity is required	Firmed	-	2/1/19	2 pcs	0 pcs	2 pcs	\$1.85/pcs	\$3.70
Grand Total:											\$159.50

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.



Certificat de Conformité / Certificate of Compliance

(016312-1)

2455, Rue Halpern | Saint-Laurent | Québec | H4S 1N9
 Tel: 514-335-3666 Fax: 514-335-3868
 www.groupaltech.com

Bon de Livraison / Packing Slip

016312-1

Livré à / Ship to

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 Tel.: 613-632-5200 Fax.:

Client / Customer:

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 BUYER:

Date expédition Ship date		Créé Par Generated By	Transport / No de Compte Courier / Acc. No.	Bon de commande Client Customer Purchase Order No.				
05-Feb-2019		Aman		042398 ✓				
#Ligne Line#	No. de Série / # Pièce Part Number / Line Item Details Job # / Ref #	Description pièce(s)	CATG. U/M	Comm. /Ordered	Exp/ Shipped	Qté NC/ NC Qty	Qté Scrap	À venir / Back Order
1	RBE350A94-3700-A-05 ✓ Rev.	RBE350A94-3700-A-05 01 -OXIDE BLACK [OXIDE BLACK] MIL-C-13924C CLASS 1	OXIDE-BLACK CH	40	40 ✓	0	0	0
2	RBT18560-3 ✓ Rev.	RBT18560-11 BLACK OXIDE FINISH MIL-C-13924C CLASS 1	OXIDE-BLACK CH	8	8 ✓	0	0	0
3	RBT18511 ✓ Rev.	RBT18511 01 -OXIDE BLACK [OXIDE BLACK] MIL-C-13924S CLASS 1 APPLY A THIN LAYER WIPE OFF EXCESS	OXIDE-BLACK CH	4	4 ✓	0	0	0
4	RBE105-31702W23-9 ✓ Rev.	RBE105-31702W23-9 01 -OXIDE BLACK [OXIDE BLACK]	OXIDE-BLACK CH	2	2 ✓	0	0	0

Notes Additionnelles / Additional Notes

Epaisseur réelle
Actual Thickness

Inspecteur Qualité
Quality Inspector

Réçu par
Received By

Nous certifions que les pièces énumérées ci-dessus ont été traitées en conformité avec votre commande et vos spécifications et rencontrent les exigences.
 Notre responsabilité financière et légale ne sera pas supérieure au montant de la facture issue.

We hereby certify that the parts listed above have been process in accordance with your purchase order and specifications and are in conformance with your requirements.
 Our financial and legal responsibility will not be higher than the amount of invoice.